

Chart of Science Curriculum Strands - Kindergarten through Grade 5

	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Physical Science	Observe, measure and predict the properties of materials.	Know that materials come in different forms (states), including solids, liquids, plasma and gases and that melting requires heating and freezing requires chilling.	Observed and measure the motion of objects.	Know that energy and matter have multiple forms and can be changed from one form to another. Know that light, like heat, is a form of energy, has a source and travels in a direction.	Know that electricity and magnetism are related effects that have many useful applications in everyday life.	Know that all matter is made up of elements and combinations of elements.
Life Science	Know that different types of animals and plants inhabit the Earth.	Know that plants and animals meet their needs in different ways. Know that there is a relationship between the shape of an animal's teeth and the food it eats. Know that there is a relationship between the basic parts of a plant and their function.	Know that plants and animals have predictable life cycles.	Know that adaptations in physical structure or behavior may improve an organism's chance for survival.	Know that all organisms need energy and matter to live and grow. Know that living organisms depend on one another and on their environment for survival. Know that cells are the smallest unit of function and structure in living things.	Know that plants and animals have structures for respiration, waste disposal and transport of materials. Know that cells are the smallest unit of function and structure in living things.
Earth Science	Know that the Earth is made of land and water and surrounded by air.	Observe, measure, describe and predict the weather.	Know that earth is made of materials that have distinct properties and provides resources for human activities.	Know that objects in the sky move in regular and predictable patterns.	Know the properties of rocks and minerals reflect the processes that formed them. Know that waves, wind, water, and ice are the agents of erosion that shape and reshape Earth's land surface.	Know that water on earth moves between the oceans and land through the processes of evaporation and condensation. Know that energy from the sun heats the earth unevenly, causing air movements resulting in changing weather patterns. Know that the solar system consists of planets and other bodies that orbit the Sun in predictable paths.
Environmental Science/Stewardship	Identify resources such as metal, paper, plastics that can be recycled and reused.	Know the ways to contribute locally and globally to the practice and preservation of habitats. Know the ways to share with others locally and globally in order to provide them with needed items such as pure water, clean air, and wholesome food.	Know that fossil fuels (such as petroleum and coal) were created millions of years ago and cannot be replenished.	Know that there is a cause and effect relationship between humans and the environment.	Know that humans have an impact on the earth.	Know that pollution created by humans has an effect on the Earth's climate.
Health Science	Identify actions (such as handwashing, covering the mouth) that are essential to good hygiene.	Know that healthy teeth require a daily regime of dental care. Know that people need clean water and air, and wholesome and nutritious food in order to grow and be healthy.	Know the stages of human development (infant to child to adolescent to adult). Know that good nutrition, proper sleep, and physical activity are important for human health and well-being.	Know that good behaviors and habits ensure safety and good health.	Know that healthy habits and behaviors are important in the overall health of the student.	Know that maintaining healthy habits and understanding physical changes are important during puberty.
Investigation and Experimentation	Perform investigations of the concepts listed above: Observe common objects using the five senses. (Taste and smell must be presented in a manner that maintains controls to provide for the students' safety.) Describe the properties of common objects. Describe the relative position of objects using one reference. Compare and sort common objects by one physical attribute.	Perform investigations of the concepts listed above: Draw accurate pictures that portray some features of the object being observed or investigated. Record observations and data with pictures, numbers, or written statements. Record observations on a bar graph. Describe the relative position of objects by using two references (e.g., above and next to, below and left of). Make observations about discrepancies that may exist between two descriptions of the same object or phenomenon.	Perform investigations of the concepts listed above: Measure length in meters and centimeters (be introduced to the metric units and instruments of measure for volume and temperature). Write or draw accurate pictures that portray some features of the object in a sequence of three steps, events, and observations. Construct bar graphs to record data, using appropriately labeled axes. Make predictions based on observed patterns and not random guessing. Compare and sort common objects according to two or more physical attributes (e.g., color, shape, texture, size, weight). Use magnifiers or microscopes to observe and draw descriptions of small objects or small features of objects. Follow oral instructions for a scientific investigation.	Perform investigations of the concepts listed above: Use the scientific progress by asking meaningful questions and conducting careful investigations. Develop their own questions and perform investigations. Repeat observations to improve accuracy. Students will differentiate evidence from opinion. Predict the outcome of a simple investigation and compare the result with the prediction. Use magnifiers or microscopes to observe and accurately draw descriptions of small objects or small features of objects.	Perform investigations of the concepts listed above: Measure and estimate the weight, length or volume of objects. Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results. Construct and interpret graphs from measurements. Follow a set of written instructions for a scientific investigation. Use magnifiers or microscopes to observe and accurately draw descriptions of small rocks, minerals or organisms or small features of rocks, minerals or organisms.	Perform investigations of the concepts listed above: Classify objects (e.g., rocks, plants, leaves) in accordance with appropriate criteria. Develop a testable question. Plan and conduct a simple investigation based on a student-developed question and write instructions others can follow to carry out the procedure. Identify the dependent and controlled variables in an investigation. Draw accurate pictures that portray some features of the object being observed or investigated. Identify a single independent variable in a scientific investigation and explain how this variable can be used to collect information to answer a question about the results of the experiment.